ENERGY REPORT
building certification | compliance | testing

Energy Strategy Report

Project:

Flat 2,3 & 4, 45 Westwood Road,
Southampton, SO17 1DH

Client:

Clydesdale Group

Project Reference:

J02947

Date:

27th March 2024

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Flats 2,3 & 4, 45 Westwood Road, Southampton, SO17 1DH

This report identifies a solution in order to comply with Planning Condition 02 of planning application 45 Westwood Road, Southampton, Southampton, SO19 7JP.

> *02.Energy Efficiency - Conversion (Pre-Commencement Condition)*
>
> *Confirmation of the energy strategy, that will achieve a reduction in CO2 emissions of at least 15% or a minimum Energy Efficiency Rating of 70 post refurbishment (an EPC rating C), must be submitted and approved in writing by the Local Planning Authority prior to the commencement of the development hereby granted consent. Measures that meet the agreed specifications must be installed and rendered fully operational prior to the first occupation of the development hereby granted consent and retained thereafter.*
> *Reason:: To ensure the development has minimised its overall demand for resources and to demonstrate compliance with policy CS20 of the Local Development Framework Core Strategy Development Plan Document Adopted Version (January 2010).*

SAP Ratings have been calculated as instructed in accordance with Approved Document L1 2021

It is proposed that to meet the requirements of the above condition the proposed flats are built to the attached specification.

The attached specification identifies the proposed route to meet the minimum Energy Efficiency Rating of 70 (EPC C)

Further to this Predicted Energy Assessment documents are attached.

Construction Specification for Part L 2021 Compliance - Conversion / Extension

Project : 45 Westwood Road, Southampton
Client: Clydesdale Group
Job no. J02947
Revison 1
Date 27/03/2024
Building regs version L1 ADL 2021 - Conversion / Extension

U value

Item	Specification	Calculated	Min requirement
Existing Walls	102.5mm Brick, 50mm Air/space, 100mm Block, 52.5mm PIR insulated plaster board	0.32	0.55
Existing Roof	100mm +200mm Mineral wool insulation	0.14	0.15
Ground Floor	Suspended timber floor no insulation added	2.00	0.70
Glazing	Glazed units	1.30	1.40
Bifold doors	Glazed units	1.30	1.40
Electricity Tariff	Single		
Ventilation	Local extracts only		
Heating	Worcester greenstar 8000 life Combi boiler or similar model		
Controls	Programmer,TRV and bypass		
Hot water	From boiler		
Air Leakage test at 50Pa	-		
Renewables			
% reduction in DER			
Predicted EPC rating	Flat 2= 72C Flat 3=70C Flat 4=71C		

SAP Ratings have been calculated as instructed in accordance with Approved Document ADL 2021

Predicted Energy Assessment

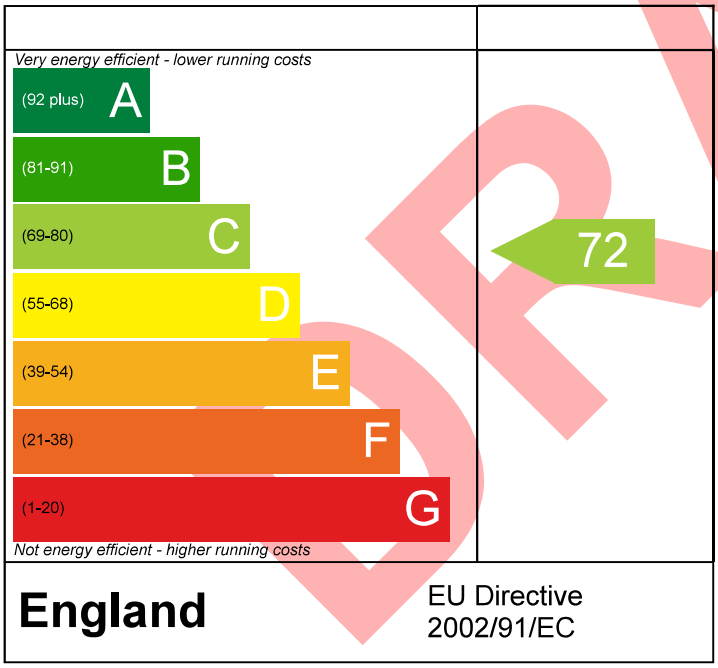
Flat 2, 45, Westwood Road, Southampton, SO17 1DH

Dwelling type:	Flat, Mid-Terrace
Date of assessment:	27/03/2024
Produced by:	Stephen Harrison
Total floor area:	44.3 m²
DRRN:	

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

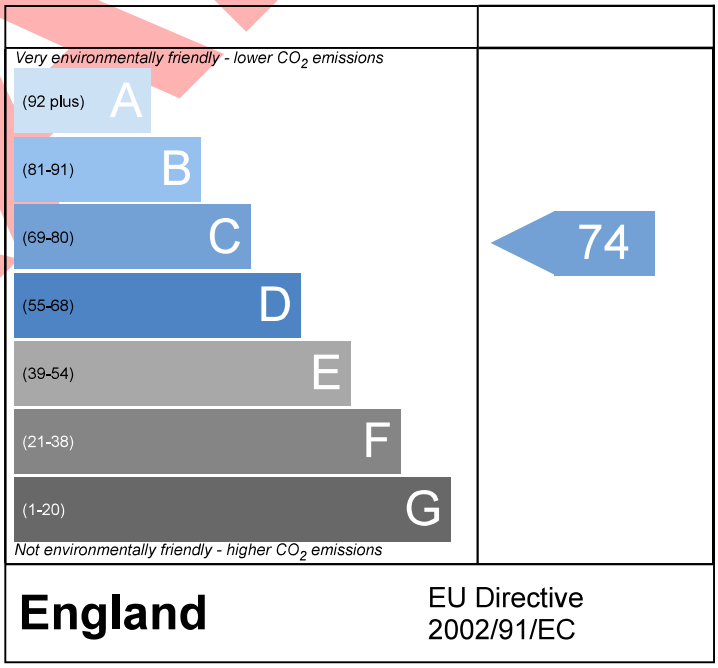
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating the less impact it has on the environment.

Predicted Energy Assessment

Flat 3, 45, Westwood Road, Southampton, SO17 1DH

Dwelling type:	Flat, Mid-Terrace
Date of assessment:	27/03/2024
Produced by:	Stephen Harrison
Total floor area:	50.2 m²
DRRN:	

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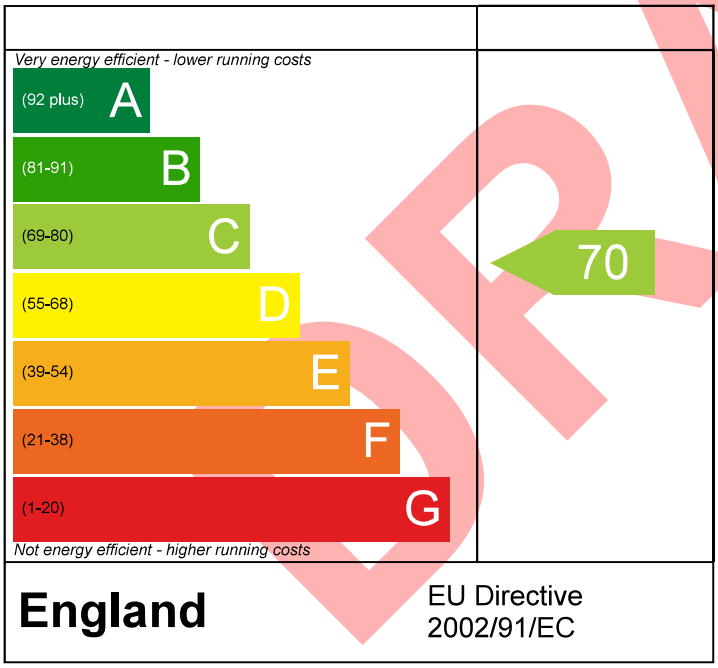
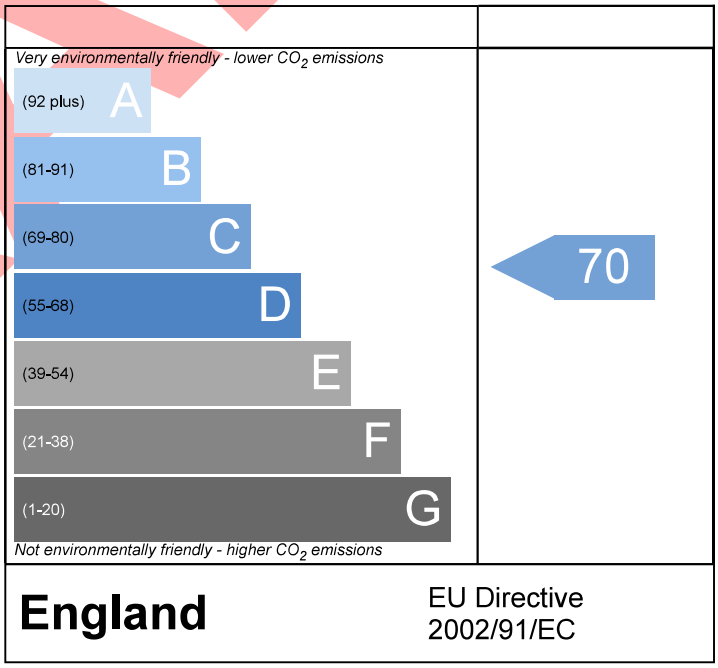
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating the less impact it has on the environment.

Predicted Energy Assessment

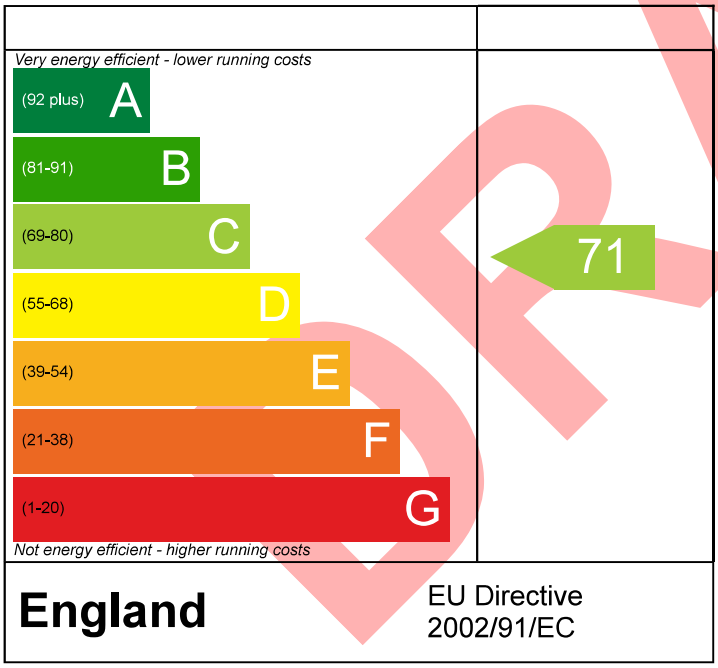
Flat 4, 45, Westwood Road, Southampton, SO17 1DH

Dwelling type:	Flat, Mid-Terrace
Date of assessment:	27/03/2024
Produced by:	Stephen Harrison
Total floor area:	70.5 m²
DRRN:	

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

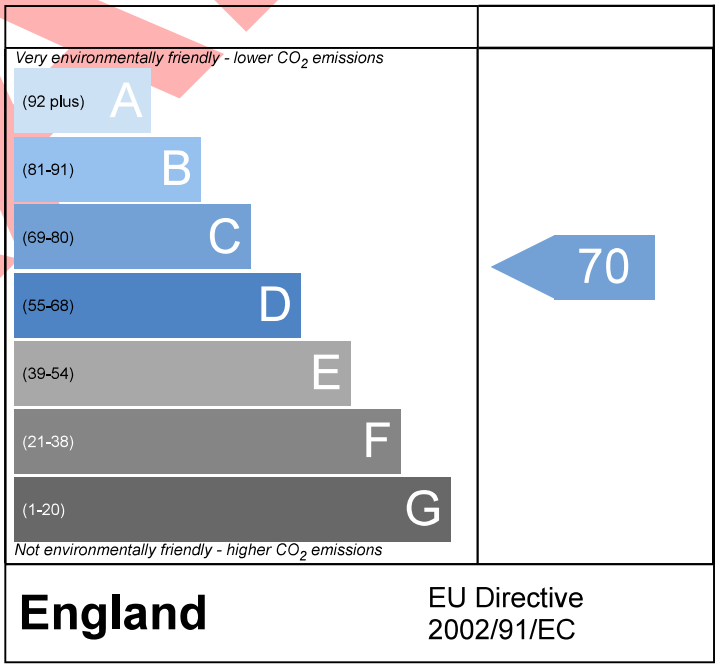
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating the less impact it has on the environment.

Summary for Input Data

elmhurst energy

Property Reference	J02947 Flat 2	Issued on Date	26/03/2024
Assessment Reference	Base	Prop Type Ref	Flat
Property	Flat 2, 45, Westwood Road, Southampton, SO17 1DH		

SAP Rating	72 C	DER		TER	
Environmental	74 C	% DER < TER			N/A
CO_2 Emissions (t/year)	1.53	DFEE		TFEE	
Compliance Check	See BREL	% DFEE < TFEE			
% DPER < TPER		DPER		TPER	

Assessor Details	Mr. Stephen Harrison	Assessor ID	W557-0001
Client	Clydesdale , Clydesdale Groupe Limited		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	Southeast
Property Tenture	1
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Flat, Mid-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
2.0 Number of Storeys	1
3.0 Date Built	2024
4.0 Sheltered Sides	3
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	11.83 m	44.30 m²	2.40 m

8.0 Living Area 19.60 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Other	0.32	0.00	28.39	18.43	0.00	None	9.96	Calculate Wall Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Solid Wall	Other	0.00	0.00	57.03		None

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Other	0.00	44.30

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Timber	Lowest occupied	Other	2.00	None	0.00	0.00	44.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	North West	6.16	
Opening	Opening Type 1	External Wall 1	South West	3.80	

Summary for Input Data

elmhurst energy

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Test Method	Blower Door	
19.0 Mechanical Ventilation		
Mechanical Ventilation		
Mechanical Ventilation System Present	No	
20.0 Fans, Open Fireplaces, Flues		
21.0 Fixed Cooling System	No	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	18616	
Fuel Type	Mains gas	
In Winter	83.80	
In Summer	88.20	
Model Name	Greenstar 8000 Life	
Manufacturer	Bosch Thermotechnology	
System Type	Combi boiler	
Controls SAP Code	2107	
Delayed Start Stat	Yes	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Unknown	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	

Summary for Input Data

Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	0

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None
In Airing Cupboard	No

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0

Summary for Input Data

elmhurst energy

Property Reference	J02947 Flat 3	Issued on Date	26/03/2024
Assessment Reference	Base	Prop Type Ref	Flat
Property	Flat 3, 45, Westwood Road, Southampton, SO17 1DH		

SAP Rating	70 C	DER		TER	
Environmental	70 C	% DER < TER			N/A
CO_2 Emissions (t/year)	1.86	DFEE		TFEE	
Compliance Check	See BREL	% DFEE < TFEE			
% DPER < TPER		DPER		TPER	

Assessor Details	Mr. Stephen Harrison	Assessor ID	W557-0001
Client	Clydesdale , Clydesdale Groupe Limited		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	Northeast
Property Tenture	1
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Flat, Mid-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
2.0 Number of Storeys	1
3.0 Date Built	2024
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	20.91 m	50.20 m²	2.40 m

8.0 Living Area 30.05 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Other	0.32	0.00	50.18	33.92	0.00	None	16.26	Calculate Wall Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Solid Wall	Other	0.00	0.00	26.88		None

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.14	9.00	14.82	14.82	None	0.00	Enter Gross Area	0.00

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Other	0.00	35.38

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Timber	Lowest occupied	Other	2.00	None	0.00	0.00	50.20

12.0 Opening Types

Summary for Input Data

elmhurst energy

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South West	5.00	
Opening	Opening Type 1	External Wall 1	South East	11.26	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Test Method	Blower Door	
19.0 Mechanical Ventilation		
Mechanical Ventilation		
Mechanical Ventilation System Present	No	
20.0 Fans, Open Fireplaces, Flues		
21.0 Fixed Cooling System	No	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	100.00	5	500	4

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	18616	
Fuel Type	Mains gas	
In Winter	83.80	
In Summer	88.20	
Model Name	Greenstar 8000 Life	
Manufacturer	Bosch Thermotechnology	
System Type	Combi boiler	
Controls SAP Code	2107	
Delayed Start Stat	Yes	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Unknown	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1										
Heat source 2										

Heat source 3
Heat source 4
Heat source 5

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	0

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None
In Airing Cupboard	No

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0

Summary for Input Data

elmhurst energy

Property Reference	J02947 Flat 4	**Issued on Date**	26/03/2024
Assessment Reference	Base	**Prop Type Ref**	Flat
Property	Flat 4, 45, Westwood Road, Southampton, SO17 1DH		

SAP Rating	71 C	**DER**		**TER**	
Environmental	70 C	**% DER < TER**			N/A
CO_2 Emissions (t/year)	2.22	**DFEE**		**TFEE**	
Compliance Check	See BREL	**% DFEE < TFEE**			
% DPER < TPER		**DPER**		**TPER**	

Assessor Details	Mr. Stephen Harrison	**Assessor ID**	W557-0001
Client	Clydesdale , Clydesdale Groupe Limited		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	Southwest
Property Tenture	1
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Flat, Mid-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
2.0 Number of Storeys	1
3.0 Date Built	2024
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	18.87 m	70.50 m²	2.40 m

8.0 Living Area 23.19 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Other	0.32	0.00	45.29	29.85	0.00	None	15.44	Calculate Wall Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Solid Wall	Other	0.00	0.00	39.88		None

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Other	0.00	70.50

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 2	Ground Floor - Timber	Lowest occupied	Other	2.00	None	0.00	0.00	70.50

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Opening Type 1	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Opening	Opening Type 1	External Wall 1	South East	8.84	
Opening	Opening Type 1	External Wall 1	North East	6.60	

Summary for Input Data

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14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.20	W/m²K
18.0 Pressure Testing	No	
Test Method	Blower Door	
19.0 Mechanical Ventilation		
Mechanical Ventilation		
Mechanical Ventilation System Present	No	
20.0 Fans, Open Fireplaces, Flues		
21.0 Fixed Cooling System	No	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	100.00	5	500	6

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	18616	
Fuel Type	Mains gas	
In Winter	83.80	
In Summer	88.20	
Model Name	Greenstar 8000 Life	
Manufacturer	Bosch Thermotechnology	
System Type	Combi boiler	
Controls SAP Code	2107	
Delayed Start Stat	Yes	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Unknown	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	

Summary for Input Data

Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	0

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None
In Airing Cupboard	No

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
			0	0
			0	0
			0	0